

## Module 14

# Calf Inspection

### Objectives

After completion of the calf inspection module, the trainee will be able to accomplish the following without the aid of references:

1. Select true statements about the following calf slaughter and dressing procedures.

a. Stunning	g. Belly opening
b. Washing	h. Brisket splitting
c. Bleeding	i. Evisceration
d. Head skinning and removal	j. Skinning
e. Hide and feet removal	k. Preparation of kidneys for inspection
f. Bung dropping	
2. Identify two conditions that require that calves intended for cold skinning be skinned during slaughter.
3. Select from a list of conditions those considered improper presentation and those considered abnormal or pathological.
4. Select from a list of sites the proper ones for placement of retained tags for retaining a carcass for veterinary disposition.
5. Given a list of calf inspection procedures, supply the proper action (observe, incise, or palpate) for each step of the following:
  - a. Head inspection
  - b. Viscera inspection
  - c. Carcass inspection
6. List the minimum number of brand marks required for each inspected and passed calf carcass prior to its entering the cooler. Give the correct brand number and diameter to be used on calf carcasses.
7. Define "bob veal," give the most common drug residue violation encountered in bob veal slaughter, and give one in-plant test to detect such residues.

## **Module 14**

### **Calf Inspection**

Calves of all sizes and ages are slaughtered. Some establishments slaughter "bob veal" calves. These calves are defined as, "under 150 pounds and less than three weeks of age". Although it is beyond the scope of this module to cover bob veal slaughter in detail, there are some aspects of these operations of which you should be aware. Historically, these very young calves have been a serious source of residue violations, particularly sulfa residues. Because of this, much of the work in plants that slaughter bob veal calves involves the use of rapid in-plant tests to detect sulfas and antibiotics. The CAST test or FAST test is used to detect residue violations. Should you be assigned to a bob veal operation in the future, you will become very familiar with the statistical sampling plans and tests used.

Beyond three weeks of age, definite guidelines or definitions for what size constitutes a calf are not in FSIS publications. Some regions have established policies for size limitations on calves. This is important because inspection procedures for calves are not nearly as complete as those for mature cattle. It is important to note that large calves require an expanded inspection procedure that is identical to that for cattle inspection. This is because some abnormal conditions, such as measles (Cysticercosis), require a certain amount of time to develop. If in doubt about whether to use calf or cattle inspection procedures, it is essential to check with your supervisor to assure you perform the appropriate procedures.

Calves are dressed by one of two methods. Calves may be hot skinned. This method is essentially the same used for other livestock. The hide is removed on the kill floor at the time of slaughter. Alternatively, calves may be cold skinned. This is also referred to as dressed "hide-on." In this method the hides are not removed on the kill floor but rather in the cooler after the carcasses have chilled.

Advocates of the traditional cold skinning claim that cold-skinned calves maintain their "bloom" (the bright red appearance of freshly dressed, properly chilled carcasses and meat) and shrink less than hot-skinned calves. This is because the hide prevents loss of moisture from the carcass during the chilling process, resulting in less weight loss.

#### **HOT SKINNING**

The advantages of cold skinning have been overcome in hot skinning by shrouding hot-skinned carcasses with a disposable plastic cover or other acceptable material. Also, washing the animal before stunning and washing the hide of the carcass after slaughter is not necessary in hot-skinned operations. Less contamination of the finished carcass is an advantage to hot skinning carcasses.

The same basic sanitary dressing requirements that apply to cattle are applicable to hot-skinned calves. They include:

- Daily cleaning of the knocking box
- Keeping the animals as dry as possible
- Not bleeding in the dry landing area if possible
- Clean head skinning and removal (head with carcass identification)
- Sanitary hide and feet removal
- Bung and bladder tying as necessary
- Sanitizing brisket opening device between each use

Plant management is responsible for handling all carcasses and parts in a sanitary manner regardless of the dressing method used.

### **COLD SKINNING ("HIDE ON")**

The manual [10.4(b)] gives guidance on the cold skinning dressing method for calves. Calves are often showered before stunning to aid in hide washing. They are then stunned by a method that meets humane requirements. After stunning they are shackled, hoisted, loaded on the bleeding rail, and bled. All hide-on calves should be bled, cleaned, and dressed while suspended on an overhead rail.

The carcass (hide) must be completely clean of dandruff, dirt, and fecal material before heading or opening of the carcass. Cleaning is sometimes facilitated with "curry combs" or other scraping instruments, and always with potable water. There needs to be sufficient water pressure, volume, and a competent washer to accomplish complete cleaning. There is one exception to the rule that cleaning of the hide must precede heading or opening of the carcass. Should you ever be assigned to an establishment where Kosher slaughter is performed, you will note that the head may be removed before the hide is washed.

Monitoring the spacing of carcasses is a very critical point. After removal from the carcass, the head is thoroughly washed and the cavities flushed in the same manner as cattle heads (this is true of hot-skinned calves also). The head is then placed on a rack or hook for inspection. As in other species, when the head is removed from the carcass a method of identification acceptable to the IIC is necessary to assure that the identity of the head and its corresponding carcass is maintained until inspection is complete.

Some plants may wish to save calf tongues but do not want the rest of the head and therefore do not want to expend the effort to skin the head. This is acceptable provided:

- The head is washed,
- Medial retropharyngeal (suprapharyngeal) lymph nodes are exposed for inspection, and
- Tongues are washed individually.

The hide is then opened and skinned back on the hock just far enough to allow insertion of the gambrel. The lower leg with the hide attached can then be removed. The front side of the hock should not be skinned until the hide is completely removed. *The hock is not to be exposed until final skinning.*

Next, the front feet are removed. Note that all procedures to this point have been performed prior to any opening being made in the carcass.

Brisket splitting, bung dropping, belly opening, and evisceration must be consistently done in a sanitary manner. Splitting the brisket may be done with a knife, saw, or other acceptable instrument. Whatever device is used, it must be sanitized following each use. The person opening the belly must take care to prevent unnecessary contamination of the carcass.

Bung tying in large calves is done as in cattle, i.e., the bung and bladder must be tied before evisceration unless the urinary bladder is removed and the bung does not cause contamination. The procedure in small calves is similar to that in sheep. The bung and bladder are grasped and the large intestine preceding the bung is stripped. The bung is severed and the bung and bladder are removed.

Now the carcass is ready to be eviscerated. Following evisceration, the viscera (abdominal viscera and pluck) are placed into a tray or truck for inspection.

Review head, viscera, and carcass inspection procedures [Manual 11.1(i)(1-3)].

### **HOT SKINNED (SKINNED) CALVES**

#### **A. Head Inspection**

1. Observe head's surfaces.
2. Incise and observe medial retropharyngeal (suprapharyngeal) lymph nodes - left and right.

## B. Viscera Inspection

1. Observe and palpate lungs' lymph nodes [tracheobronchial (bronchial) and mediastinal], costal (curved) surfaces of the lungs, and the heart.
2. Turn lungs over and observe ventral (flat) surfaces.
3. Observe spleen.
4. Observe and palpate dorsal surface of liver.
5. Turn liver over, observe ventral surface, and palpate hepatic (portal) lymph nodes
6. Observe stomach and intestine.

## C. Carcass Inspection

1. Observe outer and cut surfaces.
2. Lift forelegs and observe neck and shoulders.
3. Observe body cavities.
4. Observe and palpate medial (internal) iliac lymph nodes and kidneys.

## **COLD -SKINNED "HIDE-ON" CALVES**

In addition to the above inspection procedures, inspection procedures of "hide-on" carcasses must include observation of the hid for contamination, parasitic conditions and other abnormalities, and palpation of the back for grubs. The skins of bruised calves and those affected with grubs, lice, warts, ringworm, and other skin conditions, as well as those found unclean, must be removed as part of the dressing operations at the time of slaughter. In all cases, skinning of calves must be done in a sanitary manner and unskinned carcasses must be adequately spaced.

## **LARGE CALVES**

Recall that large calves require the same inspection procedure described for cattle. This expanded procedure is necessary on large calves because their age may have permitted abnormal conditions such as measles (*Cysticercosis*) to develop. Improper presentation of carcasses or viscera (such as dirt, hair, hide, ingesta, grease, pus, etc.) may occur as in other species. When this occurs, action must be taken by the inspector to correct the problem. Actions taken will depend on the nature and frequency of dressing errors. If in doubt about what actions need be taken, review the cattle and

swine inspection modules for assistance. More importantly, communicate with your supervisor so that there is a clear understanding of what his/her standards are for handling instances of improper presentation.

### **CALF POSTMORTEM PATHOLOGY**

When abnormal conditions are encountered on calf inspection, the proper reaction is to retain the carcass and parts for veterinary disposition (**rail it out**), or retain just the carcass if only hide removal and/or extra trimming is necessary for the carcass to pass inspection. A two-section retain tag is usually used by placing one section on the carcass and one on the viscera if the carcass, head, and viscera are retained. The corresponding head is retained by use of the head-carcass house identification tag. If only the carcass is retained, both retain tags should be placed on the carcass. The large retain tag (US Retain/Reject tag) may be used to retain carcasses for dirty hides. Should you be assigned to a calf slaughter plant you must become familiar with whatever means is utilized to identify retained carcasses and parts.

Calves are subject to disease and abnormalities as in other species, while some are unique to calves. A few examples of abnormal conditions that might be encountered include:

- Abscesses
- Pneumonia
- Nephritis
- Ringworm - This condition should be detected on antemortem inspection. It is significant in hide-on calves and would require removal of the hide at the time of slaughter.
- Warts - See Ringworm.
- Grubs - Another hide condition that requires skinning the carcass. Grubs are the larvae of the heel fly, which infects cattle. The primary reason for palpating the backs of calves at postmortem inspection is to check for the presence of these parasites.
- Arthritis
- Icterus - The carcass and parts have a yellow appearance. In true icterus, normally white tissues (such as the tendons and sclera of the eye) are affected.

Before concluding the module on calf inspection, there are a few points to reemphasize and some important additional information to add.

- There is a requirement to palpate the hides of hide-on calves for grubs, warts, or other conditions.
- The final wash of hide-on calves is limited to the body cavities, the neck, and hide in the neck region [Manual 10.4(B)(5)].
- The establishment has the responsibility for skinning and handling carcasses in a sanitary manner. Failure to do so should be documented, and if it continues, the plant should be required to mechanically separate unskinned calves during dressing, skinning, and further handling. Unsanitary hide-on (cold skinning) operations are prohibited [Manual 10.4(B)(3)].
- After carcasses are cold-skinned in the cooler, they must be examined for injection lesions, foreign bodies, parasites, bruises, or other pathology not detectable with the hide still on.
- The 1-1/4 inch (No.2) brand is used to mark calf carcasses "U.S. Inspected and Passed" before they go into the cooler.
- Brands must be legible. A minimum of one brand per calf is required to be placed anywhere that it can be read. Carcasses shipped hide-on to other plants should be covered with clear plastic or other acceptable protective coverings to prevent cross-contamination while in transit. They must be marked after hide removal with the receiving establishment's number and the inspection legend.

**MODULE 14**  
**CALF INSPECTION SUPPLEMENT**

1. Select any true statements pertaining to hot skinning or cold skinning calves. (Mark your choices with an X.)

\_\_\_\_\_ a. Less contamination of the finished carcass is an advantage of hot skinning calves rather than cold skinning them.

\_\_\_\_\_ b. Hot skinning calves is likely to cause more hair contamination than cold skinning.

\_\_\_\_\_ c. Hot-skinned calves without the benefit of disposable shrouds are apt to lose more moisture during the chilling process than cold-skinned calves.

2. Select any true statements about the sanitary dressing requirements or procedures on the following. (Mark your choices with an X.)

\_\_\_\_\_ a. Basically the same sanitary dressing requirements that apply to cattle are applicable to hot-skinned calves.

\_\_\_\_\_ b. There is no requirement for hide-on calves to be bled, cleaned, and dressed on an overhead rail.

\_\_\_\_\_ c. Hide-on calf carcasses must be completely clean of dandruff, dirt, and fecal material before heading or opening of the carcass, except in the Kosher kill.

\_\_\_\_\_ d. It is not important that hide-on calves be spaced properly to prevent contact of the skinned head with the feet of other calves.

\_\_\_\_\_ e. In preparation of hide-on calves, the front side of the hock should not be exposed until the cold skinning operation.

\_\_\_\_\_ f. There is no requirement to sanitize the brisket-splitting implement, as in cattle slaughter, after use on each animal.

\_\_\_\_\_ g. The bung-tying procedure in large calves is the same as in cattle.



3. Which of the following would be conditions that would necessitate calves intended for cold skinning being skinned at the time of slaughter? (Mark your choices with an X.)

\_\_\_\_\_ a. Presence of grubs upon hide palpation

\_\_\_\_\_ b. Presence of ringworm on the hides

\_\_\_\_\_ c. Evidence of bruised calves

\_\_\_\_\_ d. All "fine-haired" calves

4. Select any examples of improper presentation of calves for inspection. (Mark your choices with an X.)

\_\_\_\_\_ a. Icterus

\_\_\_\_\_ e. Abscesses

\_\_\_\_\_ b. Arthritis

\_\_\_\_\_ f. Pneumonia

\_\_\_\_\_ c. Hair on exposed tissues

\_\_\_\_\_ g. Nephritis

\_\_\_\_\_ d. Feces on hide

5. Select any true statements about proper tagging procedures for retaining calf carcasses with abnormalities. (Mark your choices with an X.)

\_\_\_\_\_ a. The two-section retain tag is used by placing one on the carcass and one on the head.

\_\_\_\_\_ b. The two-section retain tag is used by placing one on the carcass and one on the viscera.

6. Select the required calf viscera inspection procedures, arrange them in proper sequence, and supply the appropriate inspection actions (observe, incise, palpate) in the blanks, [Manual 11.1(I)(1)]

\_\_\_\_\_ a. \_\_\_\_\_ and \_\_\_\_\_ the lymph nodes of the lungs and the costal surface of the lungs and the heart.

\_\_\_\_\_ b. \_\_\_\_\_ and \_\_\_\_\_ the lymph nodes of the lungs [tracheobronchial (bronchial), mediastinal], the costal surface of the lungs, and the heart.

\_\_\_\_\_ c. Turn lungs over and \_\_\_\_\_ the dorsal (flat) surface.

- \_\_\_\_\_ d. Turn lungs over and \_\_\_\_\_ the ventral (flat) surface.
- \_\_\_\_\_ e. Turn liver over, \_\_\_\_\_ ventral surface, and \_\_\_\_\_ hepatic (portal) lymph nodes.
- \_\_\_\_\_ f. \_\_\_\_\_ stomach and intestine.
- \_\_\_\_\_ g. \_\_\_\_\_ spleen.
- \_\_\_\_\_ h. \_\_\_\_\_ and \_\_\_\_\_ dorsal surface of liver.

7. Supply the following information:

- a. How many brand marks must be applied to each inspected and passed calf carcass before it may go into the cooler?
- b. What is the brand number and diameter of the brand that is used to brand calf carcasses?

8. Supply the following information for "bob veal" calves:

- a. Definition (age and weight range):
- b. Most common biological residues detected:
- c. One inplant test to detect such compounds: